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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/576,727	05/23/2000	Chad A. Cobbley	3639.1US (97-1383.1)	3108

7590

07/25/2003

James R. Duzan  
Trask Britt  
P O Box 2550  
Salt Lake City, UT 84110

EXAMINER
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TRINH, MINH N

ART UNIT	PAPER NUMBER
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3729

DATE MAILED: 07/25/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/576,727

Applicant(s)

COBBLEY ET AL.

Examiner

Minh Trinh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 9-17 and 26-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 18-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Continued Prosecution Application*

1. Receipt is acknowledged of the "conditional" request for RCE application is acceptable and a RCE has been established. An action on the RCE follows.

### *Drawings*

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the feature as claimed i.e., "a second pattern having no through holes" as recited in claim 1, line 4 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1-4, 6-8, 18-21 and 23-25 are rejected under 35 U.S.C. 102(b) as anticipated by Sakemi et al (US 5,655,704).

Sakemi et al disclose an apparatus for placing a plurality of conductive spheres on a substrate comprising: a stencil plate 4 with upper and lower surfaces and a first pattern of plurality of through holes 4a, said stencil plate configured to place a plurality of conductive spheres 3 in said first pattern on a approximate surface of the substrate

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2(see Figs. 3-4); a hopper (=container 12) extending across at least a portion of the upper surface of said stencil plate 4 and closely spaced (=gap between 12 and surface of 4) therefrom to maintain control over all the spheres therein (see Fig. 4, col. 4, lines 28-36) the hopper 12 having a bottom opening with a dimension extending across the first pattern for dispersing said spheres into the through holes 4a of the stencil plate 4 and a position apparatus 8 (see Fig. 1) for moving the hopper 12 over the first pattern relative to the stencil plate 4 (see Fig. 4) for place said spheres into said through holes 4a onto the proximate surface of said substrate 2 (see Fig. 4). It is noted that a container 12 of Sakemi et al is readable as a hopper of the instant invention.

As applied to each of claim 2-4 and 6, Sakemi et al teach the spheres drop into and pass downwardly through the through holes by gravitation force as recited in claim 2 (see Fig. 4 which shows the solder balls being gravity feed into the mounting pads of the substrate 2); and the limitations of claims 3-4 and 6 (refer to Fig. 4 and the discussion at col. col. 4, lines 28-36).

As applied to each of claim 7-8, Sakemi et al teach a stencil 4 being placed as a space apart from the substrate 2 (see Fig. 4).

Limitations of claims 19-21 and 23 are similar to the discussion of claims 2-4 and 6 as set forth above.

Limitations of claims 24 and 25 are similar to the discussion of claims 7-8 as set forth above.

5. Claims 5 and 22 are rejected under 35 U.S.C. 103(a) as obvious over Sakemi et al (US 5,655,704).

As applied to each of claim 5 and 22, Sakemi et al as applied and relied upon above (claims 1 and 18) do not teach the first pattern in which each of its holes diameter is greater than the diameter of each of the spheres by up to 1mm. With respect to the above limitations, it would have been an obvious matter of design choice to choose any desired size, shape and configurations since applicant has not disclosed that the first pattern through hole greater than the diameter of each of the spheres by up to 1mm would solve any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the configurations as taught by the applied prior art (see Fig 4, that shows a loose fit between each of the spheres 3 and the associated first pattern holes 4a).

### ***Response to Arguments***

6. Applicant's arguments filed 5/23/2003, under the heading "Remarks", page 7 has been fully considered but they are not persuasive. Applicants argue that Sakemi et al do not teach a plurality of holes extending across said stencil plate . . . " or " a hopper extending across said upper surface of said stencil plate . . . " as recited in the amendment to claims. The Examiner disagreed. First, the claims is directed to an apparatus and the prior art reference meet every aspect limitations as claimed in the claims i.e., including the limitation as relied upon above "a plurality of holes extending across said stencil plate" (applicants are referred Sakemi's Fig. 4 shows a plurality of holes 4a being extending across said stencil plate 4 and an associated hopper 12 also is being extending across said upper surface of said stencil plate 4 (see also Markup).

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Therefore, it is considered that Sakemi et al as discussed in details meet the claimed limitation above.

***Prior Art References***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Prior art references are cited for their teaching of an apparatus for placing solder ball on the substrate.

***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh Trinh whose telephone number is (703) 305-2887. The examiner can normally be reached on Monday -Thursday 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on (703) 308-1789. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7307 for regular communications and (703) 305-3579 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1148.



M. Trinh  
Patent Examiner, Art Unit 3729

mt  
July 16, 2003